

## READERS OPINION

# Cardiorespiratory parameters before and after acupuncture: observations in a healthy and diseased state

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We read the paper titled "Acupuncture and exercise capacity: A case report" by Nascimento RC et al with great interest (1). The results of the study demonstrated that acupuncture is an efficient tool for improving the exercise capacity of an individual.

However, some portions of the methodology remain unclear, and we would like to highlight some published data regarding the treadmill cardiopulmonary exercise test. Basically, a treadmill is a piece of equipment used to measure the status of the heart and is used as a diagnostic and prognostic measurement when the appropriate protocol is selected. We are interested in identifying the ramp protocol used by the authors. Additionally, it would be interesting to know whether the subjects completed the protocol before and after acupuncture treatment. For future case reports or studies, we suggest that the subjects recruited for a program to improve health and well-being need to undergo specific protocols, such as the Bruce or modified Bruce protocol, depending on the design of the exercise program (2).

Commenting on the results, the authors reported that the patient showed improvement in his exercise capacity following acupuncture treatment. We would like to comment on the effect of the study on two types of clinical subjects. First, when the techniques are applied to neurological subjects (those paralyzed and semiconscious), oxygen

consumption and other variables can improve. Similarly, when these techniques are applied to cardiac patients (those diagnosed as hypertensive), negative effects can occur. Physiologically, the amount of oxygen consumption may cause the heart to become stressed following acupuncture therapy. Under such conditions, the heart needs to pump more blood to cope with the demand, which may increase the heart rate and in turn increase blood pressure. Therefore, it can be said that the results of the study would be desirable for a particular population to increase exercise capacity when it is cautiously used for patients with stable vital parameters.

Overall, this is an interesting case report for discussion that may benefit individuals who attend a program to improve their well-being. The authors and the editor need to be applauded for highlighting such an innovative treatment for exercise capacity.

## REFERENCES

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2. Kaminsky LA, Whaley MH. Evaluation of a new standardized ramp protocol: the BSU/Bruce Ramp protocol. *J Cardiopulm Rehabil*. 1998;18(6):438-44, <http://dx.doi.org/10.1097/00008483-199811000-00006>.